ABSTRACT
PHYSICOCHEMICAL CHARACTERIZATION OF COCRYSTAL QUERCETIN-MALONIC ACID PREPARED BY SOLVENT EVAPORATION METHOD

Sukma Adhi Permata

Quercetin is one of the many antioxidant agents which is widely used in pharmaceutical preparation. Nevertheless, quercetin has bioavailability problem due to its poor solubility in water. In order to improve solubility of quercetin, cocrystals method was applied. Cocrystals of quercetin were succesfully produced with malonic acid as coformer at molar ratio 1:1 (KK1), 1:2 (KK2), and 1:3 (KK3), using solvent evaporation method. Their physicochemical characteristics was investigated using Differential Thermal Analysis (DTA), X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM), and Fourier Transform Infrared Spectrophotometer (FTIR). The results from DTA and XRD showed that KK1, KK2, and KK3 formed new crystallin phase. The microphotographs from SEM showed that KK1, KK2, and KK3 formed different crystal habit than cocrystal components. The FTIR demonstrated that quercetin formed intermolecular hydrogen bonding with malonic acid at 1:1, 1:2, and 1:3 molar ratio.

Keyword : *Quercetin, Malonic acid, Cocrystal, Physicochemical characterization.*